AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A semiconductor light-receiving device comprising:

a semi-insulating substrate;

a semiconductor layer of a first conduction type that is formed on the semi-insulating substrate;

a buffer layer of the first conduction type that is formed on the semi-insulating substrate and has a lower impurity concentration than the semiconductor layer of the first conduction type;

a light absorption layer that is formed on the buffer layer and generates carriers in accordance with incident light;

a semiconductor layer of a second conduction type that is formed on the light absorption layer; and

a semiconductor intermediate layer that is interposed between the buffer layer and the light absorption layer, and has a forbidden bandwidth within a range lying between the forbidden bandwidth of the buffer layer and the forbidden bandwidth of the light absorption layer.

Claim 2 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the impurity concentration of the buffer layer is lower than 1×10^{17} cm^{-3}.

Claim 3 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the semiconductor intermediate layer includes a plurality of semiconductor layers, with forbidden bandwidths being varied stepwise.

Claim 4 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the semiconductor intermediate layer includes a plurality of semiconductor layers, with forbidden bandwidths being periodically varied.

Claim 5 (Original): The semiconductor light-receiving device as claimed in claim 1, further comprising a composition-graded semiconductor intermediate layer that is interposed between the light absorption layer and the semiconductor layer of the second conduction type, with forbidden bandwidths being varied stepwise.

Claim 6 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the semiconductor intermediate layer has a lower refractive index than the light absorption layer.

Claim 7 (Original): The semiconductor light-receiving device as claimed in claim 1, further comprising:

a first electrode unit that is electrically connected to the semiconductor layer of the first conduction type, with a first potential being applied to the first electrode unit; and

a second electrode unit that is electrically connected to the semiconductor layer of the second conduction type, a second potential being applied to the second electrode unit.

Claim 8 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein:

the light absorption layer is an InGaAs layer; and

the buffer layer is a $In_{1-x}Ga_xAs_yP_{1-y}$ (0 x 1, 0 y 1).

Claim 9 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein at least the light absorption layer and the semiconductor layer of the second conduction type form a mesa structure, with light entering the light absorption layer through a side surface of the light absorption layer that is exposed in a process of forming the mesa structure.

Claim 10 (Original): The semiconductor light-receiving device as claimed in claim 9, further comprising a semiconductor optical waveguide path that is formed on the semi-insulating substrate and guides light to the light absorption layer.

Claim 11 (Original): The semiconductor light-receiving device as claimed in claim 1, comprising a PIN-type photodiode.

Claim 12 (Original): The semiconductor light-receiving device as claimed in claim 1, comprising an avalanche photodiode.

Claim 13 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the semiconductor layer of the second conduction type has a light receiving surface formed thereon.

Claim 14 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the semi-insulating substrate has a light receiving surface on the bottom surface thereof.

Claim 15 (Original): The semiconductor light-receiving device as claimed in claim 1, wherein the first conduction type is N type.

Claim 16 (Original): A semiconductor light-receiving device comprising:

a semiconductor substrate of a first conductivity type;

a buffer layer of the first conductivity type that is formed on the semiconductor substrate and has a lower impurity concentration than the semiconductor substrate;

a light absorption layer that is formed on the buffer layer and generates carriers in accordance with incident light;

a semiconductor layer of a second conductivity type that is formed on the light absorption layer; and

a semiconductor intermediate layer that is interposed between the buffer layer and the light absorption layer, and has a forbidden bandwidth within a range lying between the forbidden bandwidth of the buffer layer and the forbidden bandwidth of the light absorption layer.

Claim 17 (Currently Amended): A semiconductor light-receiving device comprising:

a semi-insulating substrate;

a semiconductor layer of a first conduction type that is formed on the semi-insulating substrate;

a buffer layer of the first conduction type that is formed on the semiconductor layer;

a light absorption layer that is formed on the buffer layer and generates carriers in accordance with incident light;

a semiconductor layer of a second conduction type that is formed on the light absorption layer; and

a high-concentration semiconductor intermediate tunneling layer of the first conduction type that is interposed between the buffer layer and the light absorption layer and has a higher impurity

concentration than the buffer layer, the semiconductor intermediate tunneling layer allowing electrons to pass therethrough to the buffer layer due to a tunnel effect.

Claim 18 (Original): The semiconductor light-receiving device as claimed in claim 17, wherein the impurity concentration of the buffer layer is lower than 1×10^{17} cm^{-3}.

Claim 19 (Previously Presented): The semiconductor light-receiving device as claimed in claim 17, wherein the high-concentration semiconductor intermediate tunneling layer has an impurity concentration of 2×10^{18} cm^{-3}, and a film thickness of 100 nm or smaller.

Claim 20 (Original): The semiconductor light-receiving device as claimed in claim 17, further comprising a contact layer of the first conduction type that is interposed between the semi-insulating substrate and the buffer layer, the contact layer having a high impurity concentration, with a predetermined potential being supplied to the contact layer.

Claim 21 (Original): The semiconductor light-receiving device as claimed in claim 17, wherein at least the light absorption layer and the semiconductor layer of the second conduction type form a mesa structure, with light entering the light absorption layer through a side surface of the light absorption layer that is exposed in a process of forming the mesa structure.

Claim 22 (Original): The semiconductor light-receiving device as claimed in claim 21, further comprising a semiconductor optical waveguide path that is formed on the semi-insulating substrate and guides light to the light absorption layer.

Claim 23 (Currently Amended): A semiconductor light-receiving device comprising:

a semiconductor substrate of a first conduction type;

a buffer layer of the first conduction type that is formed on the semiconductor substrate and has a lower impurity concentration than the semiconductor substrate;

a light absorption layer that is formed on the buffer layer and generates carriers in accordance with incident light;

a semiconductor layer of a second conduction type that is formed on the light absorption layer; and

a high-concentration semiconductor intermediate tunneling layer of the first conduction type that is interposed between the buffer layer and the light absorption layer and has a higher impurity concentration than the buffer layer<u>, the semiconductor intermediate tunneling layer allowing electrons to pass therethrough to the buffer layer due to a tunnel effect</u>.